We claim:

1.   An Emergency Lighting Battery System, comprising:

      a Battery;

5   a Processing Circuit;

      a Multi-Voltage Power Circuit; and

      an Occupation Awareness Sensor.

2.   The Emergency Lighting Battery System of claim 1, further comprising:

10   a Current Sensor; and

      a Voltage Sensor.

3.   The Emergency Lighting Battery System of claim 2, further comprising:

      a Lighted Push-Button Test Switch.

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4.   The Emergency Lighting Battery System of claim 3, further comprising an

Inverter Frequency Sensor.

5.   The Emergency Lighting Battery System of claim 3, wherein said Processing

20   Circuit comprises:

      a Processing Device, and

      a Watch-Dog Timer.

6.   The Emergency Lighting Battery System of claim 5, wherein said Processing

Circuit further comprises:

        a Volatile Memory; and

5   a Non-Volatile Memory.

7.   The Emergency Lighting Battery System of claim 6, wherein said Processing

Circuit further comprises an Optional Real-Time Clock.

10 8. The Emergency Lighting Battery System of claim 6, wherein said Processing

Device comprises:

        at least one Flag Register; and

        a Pseudo Real-Time Clock.

15 9. The Emergency Lighting Battery System of claim 5, wherein said Processing

Device comprises:

        at least one Flag Register;

        a Pseudo Real-Time Clock;

        an Optional Volatile Memory; and

20   an Optional Non-Volatile Memory.

10. The Emergency Lighting Battery System of claim 6, wherein said Non-Volatile Memory stores Processor Configuration Data.

11. The Emergency Lighting Battery System of claim 10, wherein said Processor

5   Configuration Data comprises:

a Random Days Variable; and

a Random Test Number.

12. The Emergency Lighting Battery System of claim 10, wherein said Non-Volatile

10   Memory stores Variables, Flags, and Machine State.

13. The Emergency Lighting Battery System of claim 9, wherein said Optional Non-Volatile Memory stores Processor Configuration Data.

15   14. The Emergency Lighting Battery System of claim 13, wherein said Processor

Configuration Data comprises:

a Random Days Variable; and

a Random Test Number.

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15. The Emergency Lighting Battery System of claim 13, wherein said Optional Non-Volatile Memory stores Variables, Flags, and Machine State.

16. The Emergency Lighting Battery System of claim 5, wherein said Processing Device runs a State Machine.

17. The Emergency Lighting Battery System of claim 16, wherein said State Machine comprises:

a Sleep State;

an Initialization State;

a Start-Up State;

a Charge State;

a Test State; and

an Emergency State.

18. The Emergency Lighting Battery System of claim 16, wherein said Variables, Flags, and Machine State are written to said Non-Volatile Memory on a periodic basis.

19. The Emergency Lighting Battery System of claim 18, wherein said Processing Device runs a State Machine.

20. The Emergency Lighting Battery System of claim 19, wherein said Variables, Flags, and Machine State are written to said Non-Volatile Memory prior to said State Machine entering a Test State.

21.   The Emergency Lighting Battery System of claim 19, wherein said Variables, Flags, and Machine State are written to said Non-Volatile Memory prior to said State Machine entering an Emergency State.

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22.   The Emergency Lighting Battery System of claim 5, wherein said Processing Device performs a self-test on a periodic basis.

23.   The Emergency Lighting Battery System of claim 22, wherein Data is transmitted

10   from said Processing Device to said Lighted Push-Button Switch.

24.   The Emergency Lighting Battery System of claim 23, wherein said transmitted Data includes status information.

15   25.   The Emergency Lighting Battery System of claim 24, wherein said status information is transmitted on a periodic basis.

26.   The Emergency Lighting Battery System of claim 25, wherein said periodic status information includes error information.

20   27.   The Emergency Lighting Battery System of claim 25, wherein said periodic status information is transmitted at a rate beyond human perception.

28.   The Emergency Lighting Battery System of claim 27, wherein said transmitted periodic status information appears to human observers as a periodic heart beat.

29.   The Emergency Lighting Battery System of claim 2, further comprising:

        a Switch; and

        an External Data Transmission System.

30.   The Emergency Lighting Battery System of claim 29, wherein said External Data Transmission System comprises a radio transmitter.

31.   The Emergency Lighting Battery System of claim 29, wherein said External Data Transmission System comprises a powerline data interface.

32.   The Emergency Lighting Battery System of claim 29, wherein said External Data Transmission System transmits data to a Central Data Collection point.